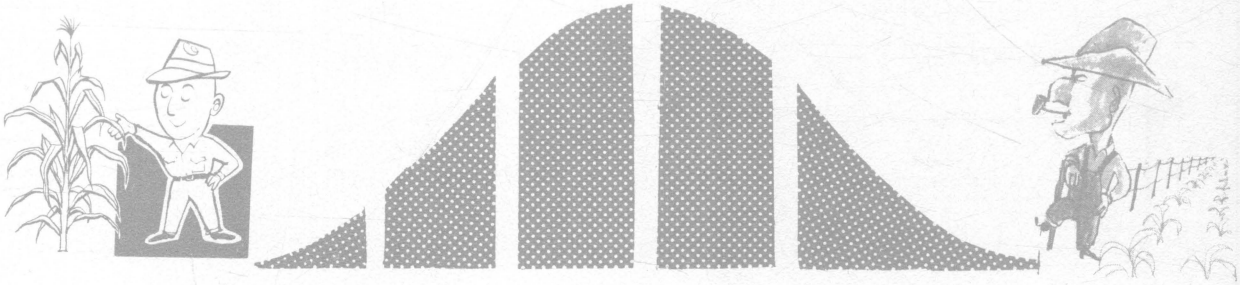
A REVIEW OF FACTORS RELATED TO INNOVATIVENESS

by

A. EUGENE HAVENS



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A REVIEW OF FACTORS RELATED TO INNOVATIVENESS*

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A. Eugene Havens **

The number of research studies on the diffusion of innovations has increased in recent years. Many of the 642 different studies completed on the diffusion of innovations have related factors to a dependent variable, innovativeness. However, little attempt at comparison of the results of these many studies has been made. The present bulletin is an attempt to review the factors related to the time of adoption of innovations. It is hoped that it will assist future investigators in their research and will facilitate a synthesis of available findings.

The decision-making process is most generally referred to by rural sociologists as the adoption process. This is probably due to the fact that most decision-making processes end in the adoption of a new idea. The adoption process is a mental process through which an individual passes from first hearing about an innovation to final adoption. An innovation is any element or idea perceived as new by the individual. Innovativeness is the degree to which an individual adopts an innovation relatively earlier than others in a social system.

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*The present analysis was originally presented in A. Eugene Havens, Social Psychological Factors Associated with the Differential Adoption of New Technologies by Milk Producers, Ph.D. Dissertation, Columbus, The Ohio State University, 1962. These studies are a part of Ohio Agricultural Experiment Station Project Hatch 166, "The Communication Process and the Adoption of Farm and Home Practices."

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The adoption process is generally conceptualized as a series of stages through which an individual passes while making a decision to (1) adopt, or (2) reject an innovation.* Most researchers conceptualize five stages in the adoption process: (1) awareness, (2) interest, (3) evaluation, (4) trial, and (5) adoption. The present bulletin focuses on the last stage.

The purpose of this bulletin is to review and synthesize the literature concerned with factors related to the time of adoption of innovations. No claim is made that all the studies relating factors to time of adoption are included. However, 60 studies which have explicitly or implicitly utilized innovativeness as a dependent variable have been reviewed and presented in table form. Table 1 presents information about (1) the sample size, (2) the universe, (3) the unit of analysis, (4) the factor related to innovativeness, (5) the statistical test utilized, (6) the direction of the relationship, and (7) the investigator. After the listing of the ivestigator's name is a bibliographic reference number. This reference number refers to the investigator's study listed in a companion bulletin by Rogers.**

Now that these findings have been presented in tabular form, it is possible to draw conclusions about the factors related to innovativeness. Havens employed Zetterburg's*** typology to subsume

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* For a detailed discussion of the adoption process see Everett M. Rogers, Diffusion of Innovations, N. Y., Free Press, 1962.

**Everett M. Rogers, Bibliography on the Diffusion of Innovations, Columbus, Ohio Agricultural Experiment Station, Department of Agricultural Economics and Rural Sociology Mimeo Bulletin AE 328, 1962.

***Hans Zetterburg, "Types and Forms of Scoiological Theory," Paper presented to the North Central Rural Sociology Committee, Chicago, November, 1961.

these 40 or more independent variables under five theoretical propositions. Havens also attempted to determine the types and forms of causal linkage of the five theoretical propositions.*

It is hoped that the present review of literature on factors related to innovativeness may provide direction for future research. It may be possible for other investigators to advance theoretical propositions on the basis of the past research studies reviewed in the present bulletin.

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* Havens, op cit.

The present bulletin is one in a series of three related bulletins which deal with the diffusion of new ideas.

Mimeo Bulletin AE 328. Everett M. Rogers, Bibliography on the Diffusion of Innovations.

Mimeo Bulletin AE 329. A. Eugene Havens, A Review of Factors Related to Innovativeness.

Mimeo Bulletin AE 330. Everett M. Rogers, A. Eugene Havens, and David G. Cartano, The Construction of Innovativeness Scales.

Table 1 A Review of Factors Related to Innovativeness

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
1. Size of Operation*	Marsh & Coleman (1954d, 1955b, 1956)	Individual	393 farmers in 1 Kentucky County	X^2	1%	+
	Fliegel (1956)	Individual	170 Farmers with families of H.S. age in 1 Wisconsin County	r	N.S.	o
	Copp (1956)	Individual	157 Beef farmers in 3 Kansas Townships	Eta	1%	+
	Hoffer & Stangland (1958b)	Individual	93 farmers in 1 Michigan County	X^2	5%	+
	Belcher (1958) (Salk Polio Vaccine)	Household	428 Families in 2 Georgia Counties	X^2	N.S.	o
	Fliegel (1957)	Individual	200 farmers in 1 Wisconsin County	X^2	1%	+
	Rahim (1961a)	Family	63 families 1 Pakistan Village	X^2	5%	+
	Beal and Rogers (1960)	Individual	148 farmers in 1 Iowa community	r	N.S.	o
	van dan Ban (1957b)	Individual	2,005 farmers in 18 Dutch Communities	Sign	1%	+
	Straus (1960)	Individual	903 farmers from all farmers in Wisconsin	r	1%	+
	Sizer and Porter (1960)	Individual	262 farmers in 1 West Virginia County	r	1%	+
	Lionberger and Coughenour (1957)	Individual	279 farmers in 1 Missouri Community	r	1%	+

*Measures of scale includes PMWU's, gross farm income, and farm size.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
1. Size of Operation (Con't)	Hobbs (1960	Individual	315 farmers from all commercial farmers in Iowa	r	1%	+
	Lindstrom (1958)	Individual	86 Housewives in 1 Japanese village	X^2	1%	+
	Rogers and Pitzer (1960)	Individual	105 Ohio farmers	Quartile Dev.	1%	+
	Rogers (1960b)	Individual	104 Ohio farmers	r	1%	+
	Rogers and Burdge (1961)	Individual	61 muck vegetable growers in 2 Ohio Counties	Quartile Dev.	1%	+
	Rogers and Burdge (1962)	Individual	77 truck crop farmers	r	1%	+
	Blackmore and others (1955)	Individual	493 farmers in 11 Virginia Counties	not reported	1%	+
	Klietsch (1961)	Individual	193 dairy farmers in 1 Minn. County	X^2	1%	+
	Kreitlow and Duncan (1956)	Individual	380 farmers from 18 neighborhoods in Wisconsin	r	1%	+
	Mort and Cornell (adaptability of schools to new techniques) (1941)	School	36 communities in Pennsylvania	r	1%	+
	Ayer (1952)* (new education practices)	School	68 New York City schools	factor analysis	1%	+

*The common factor is comprised of income of community, tax base, and tax for debt service.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of
1. Size of Operation (Con't)	Sheppard (1960)	Individual	446 farmers from all parishes in England and Wales	x^2	1%	+
	Jones (1960)	Individual	52 East Midland farmers in England	X^2	5%	+
	Jones (1960)	Individual	55 farmers from 4 Cardigarshire Parishes	X^2	1%	+
	Cohen (1962)	Individual	82 households in Ridgewood, New Jersey	r	1%	+
	Wilkening (1952)	Individual	341 farmers in three North Carolina Co.	ANOV	1%	+
	Ploch (1960)	Individual	245 broiler growers in Maine	X^2	1%	+
	Emery and Oeser (1958)	Individual	36 farmers in Bairnsdale, Australia	X^2	1%	+

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationship
2. Education	Marsh & Coleman (1955b)	Individual	393 farmers in 1 Kentucky County	X^2	1%	+
	Copp (1956)	Individual	157 Beef farmers in 3 Kansas townships	F	1%	+
	Hoffer & Stangland (1958b)	Individual	93 farmers in 1 Michigan community	x^2	5%	+
	Belcher (1958) (Salk Polio Vaccine)	Household	428 families in 2 Georgia Counties	X^2	N.S.	o
	Rahim (1961a)*	Family	63 families in 1 Pakistan Village	X^2	1%	+
	van den Ban (1957b)	Individual	2,005 farmers in 18 Dutch communities	Sign	1%	+
	Straus (1960)	Individual	903 farmers from all farmers in Wisconsin	r	1%	+
	Sizer and Porter (1960)	Individual	262 farmers in 1 West Va. County	r	1%	+
	Lionberger and Coughenour (1957)	Individual	279 farmers in 1 Missouri community	r	1%	+
	Hobbs (1960)	Individual	315 farmers from all commercial farmers in Iowa	r	1%	+
	Coughenour (1960)	Individual	285 farmers in 1 Kentucky county	Gamma	1%	+
	Rahudkar (1961)	Individual	1 Indian Village	X^2	1%	+

* Rahim used literacy as a measure of education.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
2. Education (Con't)	Lowry (1958) (Health practices)	Individual	611 residents from all households in 2 North Carolina counties	X^2	1%	+
	Rogers and Pitzer (1960)	Individual	105 Ohio farmers	Quartile Dev.	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
	Rogers and Burdge (1961)	Individual	61 muck vegetable growers in 2 Ohio communities	Quartile Dev.	1%	+
	Rogers and Burdge (1962)	Individual	77 truck crop farmers in 1 Ohio county	r	1%	+
	Kreitlow and Duncan (1956)	Individual	380 farmers from 18 neighborhoods in Wisconsin	r	1%	+
	Mort and Cornell (Adoptability of schools to new techniques) (1960)	School	26 communities in Pennsylvania	r	1%	+
	Yeracaris (1961) (T B testing)	Individual	550 parents of H.S. students in 2 Buffalo, N. Y., high schools	C R	1%	+
	Sheppard (1960	Individual	446 farmers from all parishes in England & Wales	X^2	1%	+
	Jones (1960)	Individual	52 East Midland farmers in England	X^2	5%	+

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
2. Education (Con't)	Wilkening (1952a)	Individual	341 farmiles in 3 North Carolina Counties	ANOV	1%	+
	Ploch (1960)	Individual	245 broiler growers in Maine	X^2	1%	+
	Emery and Oeser (1958)	Individual	36 farmers in Brainsdale, Austrailia	X^2	1%	+

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
3. Social Status (Con't)	Rogers and Burdge (1962)	Individual	77 truck crop farmers in 7 Ohio communities	r	1%	+
	Kreitlow and Duncan (1956)	Individual	300 farmers from 18 neighborhoods in Wisc.	r	1%	+
	Mort and Cornell** (adaptability of schools to new techniques) (1941)	School	36 Pennsylvania communities	r	1%	+
	Pierce** (Adaptability of schools to new techniques) (1947)	School	68 New York City Schools	r	1%	+
	Ayer (1952) (School practices)	School	68 New York City Schools	Factor	1%	+
	Yerocaris (1961) (T B testing)	Individual	550 Parents of students in 2 Buffalo, N. Y. high schools	C R	1%	+
	Jones (1960)	Individual	53 farmers from 4 Cardegarshire Parishes	X^2	1%	+
	Wilkening (1952a)	Individual	341 farmers in three North Carolina counties	ANOV	1%	+
	Wilkening (1953)	Individual	170 Farmers in one Wisconsin County	X^2	1%	+
	Ploch (1960)	Individual	245 broiler growers in Maine	X^2	1%	+

**Related to the status of community members.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Test of Sig.	Direction of Relationships
3. Social Status	Marsh & Coleman (1954d, 1955b, 1956)	Individual	393 farmers in 1 Kentucky county	X^2	1%	+
	Fliegel (1956)	Individual	170 farmers with families of H.S. age in Wisc. county	r	1%	+
	Belcher (1958) (Salk Polio Vaccine)	Household	428 families in 2 Georgia counties	X^2	1%	+
	van den Ban*(1957b)	Individual	2,005 farmers in 18 Dutch communities	Sign	1%	+
	Sizer and Porter (1960)	Individual	262 familes in 1 West Va. county	r	1%	+
	Lionberger and Coughenour (1957)	Individual	279 farmers in 1 Missouri community	r	1%	+
	Armstrong (1959)	County	110 counties in Kentucky	r	1%	+
	Rahudkar (1961)	Individual	1 Indian village	X^2	1%	+
	Rogers (1958)	Individual	148 farmers in 1 Iowa community	r	1%	+
	Lowry (1958)	Individual	611 residents from all households in 2 North Carolina co.	X^2	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+

* Used degree of urbanization as index of level of living

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
4. Age						
	Rogers and Burdge (1962)	Individual	77 truck crop farmers in 1 Ohio county	r	N. S.	0
	Klietsch (1961)	Individual	193 dairy farmers in 1 Minnesota county	X^2	1%	+
	Yerocaris (1961) (TB testing)	Individual	550 parents of H. S. children from 2 Buffalo, N. Y. H. S.	C R	N. S.	0
	Sheppard (1960)	Individual	446 farmers from all parishes in England & Wales	X^2	1%	+
	Jones (1960)	Individual	52 East Midland farmers in England	X^2	1%	-
	Jones (1960)	Individual	53 farmers from 4 Cardegarshire Parishes	X^2	N. S.	0
	Wilkening (1952a)	Individual	341 farmers in three North Carolina counties	X	N. S.	0
	Ploch (1960)	Individual	245 broiler growers in Maine	X^2	1%	-

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
5. Contact with Information	Marsh & Coleman (1954d, 1955b, 1956)	Individual	393 farmers in 1 Kentucky county	X^2	1%	+
	Fliegel (1956)	Individual	170 farmers with children of H. S. age in 1 Wisc. county.	r	1%	+
	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	r	< 1%	+
	Belcher (1958) (Salk Polio Vaccine)	Household	428 residents in 2 Georgia counties	X^2	N. S.	0
	Rahim (1961a)	Family	63 families in 1 Pakistan village	r	1%	+
	Beal and Rogers (1960)	Individual	148 farmers in 1 Iowa community	r	1%	+
	Sizer and Porter (1960)	Individual	262 farmers in 1 West Virginia co.	r	1%	+
	Hobbs (1960)	Individual	315 commercial farmers in Iowa	r	1%	+
	Coughenour (1960)	Individual	285 farmers in 1 Kentucky county	Gamma	1%	+
	Rogers (1958a)	Individual	148 farmers in 1 Iowa community	r	1%	+
	Lindstrom (1958)	Individual	86 housewives in 1 Japanese village	None	--	+
	Rogers and Havens (1961b)	Individual	88 homemakers in Ohio	r	1%	+

* Includes both personal and impersonal sources (e. g. Extension contact, television and radio) but does not include reading of magazines and bulletins.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
5. Contact with Information (con't)	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
	Rogers and Burdge (1962)	Individual	77 farmers in 1 Ohio community	r	1%	+
	Sheppard (1960)	Individual	446 farmers in all parishes in England & Wales	X^2	1%	+
	Jones (1960)	Individual	55 farmers in 4 Cardigarshire Parishes	X^2	1%	+
	Wilkening (1952a)	Individual	341 farmers in three North Carolina counties	X	1%	+
	Photiadis (1961a)	Individual	224 farmers in one South Dakota county	X^2	1%	+

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
6. Social Participation	Marsh & Coleman (1955b)	Individual	395 farmers in 1 Kentucky county	X^2	1%	+
	Copp (1956)	Individual	157 Beef farmers in 3 Kansas townships	F	1%	+
	Belcher (1950) (Salk Polio Vaccine)	Household	428 residents in 2 Georgia counties	X^2	1%	-
	Rahim (1961a)	Family	63 families in 1 Pakistan village	X^2	1%	+
	van den Ban (1957b)	Individual	2,005 farmers in 18 Dutch communities	Sign	1%	-
	Sizer and Porter (1960)	Individual	262 farmers in 1 West Virginia county	r	1%	+
	Licnberger and Coughenour (1957)	Individual	279 farmers in 1 Missouri community	r	1%	+
	Coughenour (1960)	Individual	285 farmers in 1 Kentucky county	Gamma	1%	+
	Lowry (1958) (Health practices)	Individual	611 families in all households in 2 N. C. counties	X^2	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
	Kreitlow and Duncan (1956)	Individual	380 farmers in 1 neighborhood in Wis.	r	1%	+-
	Jones (1960)	Individual	52 East Midland farmers in England	X^2	N.S.	o
	Jones (1960)	Individual	55 farmers in 4 Cardigarshire Parishes	X^2	N.S.	o

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationship
7. Idenifi-cation with Local Groups*	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	Not reported	5%	-
	Lionberger and Coughenour (1957)	Individual	279 farmers in 1 Missouri community	X^2	1%	-
	Hobbs (1960)	Individual	315 commercial farmers in Iowa	r	1%	-
	Rogers (1958a)	Individual	148 farmers in one Iowa community	r	N.S.	o
	Rogers (1961b)	Individual	104 Ohio farmers	r	N.S.	o
	Rogers and Burdge (1962)	Individual	77 farmers in 1 Ohio community	r	1%	-
	Kreitlow and Duncan (1956)	Individual	380 farmers in 1 neighborhood in Wisconsin	r	N.S.	o
	Jones (1960)	Individual	55 farmers in 4 Cardigarshire Parishes	X^2	5%	-
	Cohen** (1962)	Individual	82 households in Ridgewood, New Jersey	r	1%	+

*Includes measures of local and cosmopolitan orientation.

**Cohen labeled his independent variable as "mobility," but his measure is similar to other measures of cosmopolitness.

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
8. Neighborhood Norm on Innovativeness	Marsh and Coleman (1954d, 1956)	Individual	393 farmers in 1 Kentucky county	X^2	1%	+
	Flinn (1961)	Individual	77 farmers in 1 Ohio county	r	<1%	+
	Mort and Connell (1941) (School adaptability of new practices)	School	36 Pennsylvania communities	r	1%	+
	Pierce (1947) (School adaptability of new practices)	School	68 New York City schools	r	1%	+
	van den Ban (1960b)	Individual	900 farmers in 9 Wisconsin counties	X^2	1%	+

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
9. Opinion Leadership	van der Ban (1957b)	Individual	2,005 farmers in 18 Dutch communities	Sign	1%	+
	Brandner (1960)	Individual	farmers in NE and SW Kansas	r	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
	Rogers and Burdge (1962)	Individual	77 farmers in 1 Ohio county	r	1%	+
	Rogers and Burdge (1961)	Individual	61 muck vegetable growers in Ohio	r	1%	+

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
10. Management Practices*	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	F	1%	+
	Hobbs (1960)	Individual	315 commercial farmers in Iowa	r	1%	+
	Armstrong (1959)	County	110 counties in Kentucky	r	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+

* Includes record keeping, use of land, progressionalism in farming, per cent of commercial farms, and labor efficiency as indices.

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
11. Self Perception of Innovativeness	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	1%	+
	Beal and Rogers (1960)	Individual	148 farmers in 1 Iowa Community	r	N.S.	o
	Rogers and Burdge (1962)	Individual	77 farmers in 1 Ohio county	r	1%	+
12. Attitude Toward Credit	Fliegel (1959)	Individual	189 farmers under 60 years of age in 1 Penn. county	X^2	5%	+
	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	F	1%	+
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
13. Interaction with Other Adopters	Mansfield (1960a) (Acceptance of machines by Ind. firms)	Firm	All steel, coal, railroad, and breweries in U. S.	Stochastic	1%	+
	Havens and Rogers (1961b)	Individual	259 farmers in 1 Iowa county	rho	1%	+
	Menzel (1959) (Doctors' acceptance of new drugs)	Individual	216 doctors in 3 cities	S-curve	1%	+
14. Reading Farm Bulletins & Magazines	Marsh & Coleman (1955b)	Individual	393 farmers in 1 Kentucky county	X^2	1%	+
	Beal and Rogers (1960)	Individual	143 farmers in 1 Iowa community	r	N.S.	o
	Rogers (1961b)	Individual	104 Ohio farmers	r	5%	+
	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	X^2	1%	+

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
15. Years of Farming Experience	Marsh and Coleman (1955b)	Individual	393 farmers in 1 Kentucky county	X^2	N.S.	o
	Hoffer and Stangland (1958b)	Individual	93 farmers in 1 Michigan community	X^2	N.S.	o
	Sheppard (1960)	Individual	446 farmers in all parishes in England & Wales	X^2	1%	-
16. Rigidity	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	1%	-
	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	Eta	<1%	-
17. Length of Adoption Period (i.e., time from awareness to adoption)	Beal and Rogers (1960)	Individual	148 farmers in 1 Iowa community	r	1%	-
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	-
18. Knowledge of Innovations	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	N.S.	o
	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
19. Attitude Toward Change	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	5%	+
	Rogers (1958a)	Individual	148 farmers in 1 Iowa community	r	1%	+

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
20. Attitudes Toward Innovations	Fliegel (1956)	Individual	170 farmers with children of H.S. age in 1 Wisconsin county	r	1%	+
	Hobbs (1960)	Individual	315 commercial farmers in Iowa	r	1%	+
	Wilkening (1952a)	Individual	341 farmers in three North Carolina counties	ANOV	1%	+
21. Family Integration	Wilkening (1954b)	Individual	170 farmers in 1 Wisconsin county	X^2	N.S.	o
	Rogers (1958a)	Individual	148 farmers in 1 Iowa community	r	N.S.	o
22. Individual vs. Family Decisions	Fliegel (1956)	Individual	170 farmers with children of H.S. age in 1 Wisconsin county	X^2	N.S.	o
	Wilkening (1954b)	Individual	170 farmers in 1 Wisconsin county	X^2	N.S.	o
23. Religion						
a. Affiliation	Copp (1956)	Individual	170 beef farmers in 3 Kansas townships	F	N.S.	o
	van den Ban (1957 b)	Individual	2,005 farmers in 18 Dutch communities	Sign	N.S.	o
	Yerocaris (1961) (TB testing)	Individual	550 parents of H.S. students in 2 Buffalo, N. Y. H. S.	C. R.	5%	*

* Jewish highest adopters, Catholic lowest adopters.

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
23. (con't)						
b. Church Membership	Copp (1956)	Individual	157 beef farmers in 3 Kansas townships	Eta	5%	+
	van den Ban (1957b)	Individual	2,005 farmers in 18 Dutch communities	Sign	1%	+
	Kreitlow and Duncan (1956)	Individual	380 farmers in 1 neighborhood in Wisconsin	r	N.S.	o
24. Values						
a. Efficiency	Hofner & Stangland (1958b)	Individual	83 farmers in 1 Michigan community	X^2	>5%	+
	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o
b. Self-reliance and Individualism	Hoffer & Stangland (1958b)	Individual	93 farmers in 1 Michigan community	X^2	5%	+
	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o
c. Progress	Hoffer & Stangland (1958b)	Individual	93 farmers in 1 Michigan community	X^2	N.S.	o
	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o
d. Security	Hoffer & Stangland (1958b)	Individual	93 farmers in 1 Michigan community	X^2	N.S.	o
	Bose (1962)	Individual	80 farmers in the Baraset Region of West Bengal, India	r	N.S.	o

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
24. d. Security (con't)	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	1%	-
e. Conservatism-Traditionalism	Hoffer & Strangland (1958b)	Individual	93 farmers in 1 Michigan community	X^2	>5%	-
	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	5%	-
	Bose (1962)	Individual	80 farmers in the Barasat Region of West Bengal, India	r	1%	-
f. Achievement	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o
g. Belief in Science	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o
	Hobbs (1960)	Individual	315 commercial farmers in Iowa	r	1%	+
	Bose (1962)	Individual	80 farmers in the Barasat of West Bengal, India	r	1%	+
h. Material comfort	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	5%	+
i. Familism	Fliegel (1956)	Individual	170 farmers with families of H.S. age in 1 Wisconsin county	r	1%	+
	Ramsey & Others (1959)	Individual	188 farmers in 1 N. Y. county	r	N.S.	o

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
24. i. Familism (con't)	Wilkening (1954b)	Individual	170 farmers in 1 Wisconsin county	X^2	N.S.	o
	Kreitlow and Duncan (1956)	Individual	380 farmers in 138 neighborhoods in Wisconsin	r	N.S.	o
	Bose (1962)	Individual	80 farmers in the Baraset Region of West Bengal, India	r	N.S.	o

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
24. Values (cont'd)						
j. Farming as a Way of Life	Ramsey & Others (1959)	Individual	188 farmers in 1 N.Y. county	r	5%	+
k. Protestant Ethic	Ramsey & Others (1959)	Individual	188 farmers in 1 N.Y. county	r	5%	-
	Burdge (1961)	Individual	89 families in 1 Ohio county	r	1%	-
25. Venturesomness	Rogers (1961b)	Individual	104 Ohio farms	r	1%	+
26. Belief in Ag. Magic	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	-
27. Wife Role Supportiveness	Straus (1960)	Individual	903 farmers in Wisconsin county	r	1%	+
28. Specialization	Rogers (1961b)	Individual	104 Ohio farmers	r	1%	+
	Jones (1960)	Individual	52 East Midland farmers in England	X^2	1%	+
	Rogers & Burdge (1962)	Individual	77 truck crop farmers in 1 Ohio county	r	1%	+

Factor	Investigator	Unit of Analysis	Sample Size and Universe	Test of Sig.	Level of Sig.	Direction of Relationships
29. Level of Aspiration	Fliegel (1959)	Individual	189 farmers in 1 Pennsylvania county	X^2	N.S.	o
30. Innovative Proneness	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	5%	+
31. Dogmatism	Rogers (1957b)	Individual	23 farmers in 1 Iowa community	r	N.S.	o
32. Visiting Patterns	Marsh & Coleman (1955b)	Individual	393 farmers in 1 Kentucky county	X^2	N.S.	o
33. Rationality	Dean & Others (1958)	Individual	547 farmers in 8 N. C. counties	X^2	1%	+
	Bose (1962)	Individual	80 farmers in the Baraset Region of West Bengal, India	r	1%	+
34. Individual Goals						
a. Profit	Wilkening & Johnson (1961)	Individual	137 farmers in 1 Wisconsin county	X^2	N.S.	o
b. Convenience	Wilkening & Johnson (1961)	Individual	137 farmers in 1 Wisconsin county	X^2	N.S.	o
c. Quality	Wilkening & Johnson (1961)	Individual	137 farmers in 1 Wisconsin county	X^2	N.S.	o
d. Keeping up with others	Wilkening & Johnson (1961)	Individual	137 farmers in 1 Wisconsin county	X^2	N.S.	o

Factor	[illegible]	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
34. Individual Goals (con't)						
e. Favorable Interpersonal Relations	Wilkening & Johnson (1961)	Individual	137 farmers in 1 Wisconsin County	X^2	N.S.	o
35. Characteristics of the Innovation*						
a. Congruenc	Brandner (1960)	Individual	All farmers in NE and SW Kansas	r	1%	+
	Kivlin (1960)	Individual	229 farmers in 1 Pennsylvania com.	r	5%	+
	Yeraçaris (1961) (TB testing)	Individual	555 parents of students in 2 Buffalo, New York, H.S.	C R	1%	+
	Tucker (1961)	Individual	86 farmers in 1 Ohio county	rho	N.S.	o
b. Initial Cost	Kivlin (1960)	Individual	229 dairy farmers in 1 Pennsylvania county	r	N.S.	o
c. Divisibility of Trial.	Kivlin (1960)	Individual	229 dairy farmers in 1 Pennsylvania county	r	N.S.	o
d. Complexity	Kivlin(1960)	Individual	229 dairy farmers in 1 Pennsylvania county	r	5%	-

*In these studies, the dependent variable is the rate at which the innovation spread to a number of people, rather than individual innovativeness.

Factor	Investigator	Unit of Analysis	Sample Size And Universe	Test of Sig.	Level of Sig.	Direction of Relationships
35. (con't)						
e. Continuing Cost	Kivlin (1960)	Individual	229 dairy farmers in 1 Pennsylvania county	r	N.S.	o
f. Recovery of Cost (Profitability.	Griliches (1957)	Crop Reporting District	Corn growers in Midwest	Logistic curve	N.S.	o
	Mansfield (1960a)	firms	All coal, steel, railroad firms and brewries in U.S.	Stochastic model	1%	+
	Havens & Rogers (1961)	Individual	259 farmers in 1 Iowa county	rho	N.S.	o
	Tucker (1961)	Individual	86 farmers in 1 Ohio county	rho	N.S.	o
g. Mechanical Attractiveness	Tucker (1961)	Individual	86 farmers in 1 Ohio county	r	1%	+
h. Saving of Time	Tucker (1961)	Individual	86 farmers in 1 Ohio county	rho	N.S.	o
i. Saving Discomfort	Tucker (1961)	Individual	86 farmers in 1 Ohio county	rho	N.S.	o
j. Advantage	Tucker (1961)	Individual	86 farmers in 1 Ohio county	r	1%	+
36. Homemaker Innovativeness	Wilkening (1953)	Individual	170 farmers in one Wisconsin county	X^2	1%	+
	Rogers and Havens (1961b)	Individual	104 Ohio farmers	r	1%	+